

Student: José Francisco Lima Barbero

STSM Reference: ECOST-STSM-FA1404-011015-067134

STSM Report: Learning in-vitro feeding techniques in Poultry Red Mite.

Poultry Red Mite (*Dermanyssus gallinae*) is a haematophagus mite which is considered the most significant ectoparasite of egg-laying poultry worldwide. Learning in-vitro feeding techniques is essential for the development of controlled assays which will be used by our team for testing new vaccine candidates. Dr. Alasdair Nisbet and his team were chosen by their skills shown in in-vitro feeding assays for learning such techniques.

The main activities undertaken during the STSM have been:

- **Collecting mites.** During the STSM, 2 mites collections have been carried out in two different production systems of the UK: an organic free-range poultry farm and in an intensive enriched-cage egg production farm. These collections have improved my mite-collection skills. It will allow me to collect and handle mites in higher numbers and more efficiently.
- **Mites conditioning.** In order to improve mite feeding during the assays a previous starving time is required. Different times of starving were compared and we determined that a 1-week starvation period was sufficient to induce mite feeding whilst maintaining a low background mite mortality.
- **In-vitro feeding assays.** 2 in-vitro feeding assays were carried out during which we tested several assay systems including a new design. In both of them different feeding devices were used to compare effectiveness. This is the main aim of the STSM and the prospecting knowledge has been achieved and the student will be able to carry an in-vitro feeding assay at his Home Institution.
- **Post-assay mite monitoring.** The student has been taught how to identify recently fed mites and the technique for monitoring individual survival and egg-laying. This technique will be also extremely useful for future works to be done at his Home Institution.

Despite some negative results obtained from the assays, as some of them failed, some ideas came out during the STSM which may improve the technique and be useful for both teams. A good relationship has been established with Host Team and both parts are ready for future collaborations.